

Technical Data Sheet

CellScrew®
mini



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1. Product description

The CellScrew® mini is a single-use cell culture device with a growth area of 850 cm². The CellScrew®s surface is suitable for the cultivation of adherent cell lines such as HEK-293 and more. It is manufactured in an additive manufacturing process and is made of plant-based polylactic acid (PLA). The CellScrew® mini can be used to cultivate larger quantities of cells with easy handling steps or as a seed train for the CellScrew® 6K or 10K. Three CellScrew® minis can fit into the CellScrew® mini TriDock, which shares the same outer diameter as the CellScrew® 6K and 10K, enabling its use on equivalent roller devices. Key data is provided below.

2. Technical overview

Dimensions

Dimension	Unit	Value
Height	[mm]	161
Diameter	[mm]	53
Cylinder height	[mm]	134.5
Konus height	[mm]	9.35
Konus angle	[°]	35
Cap diameter	[mm]	39
Cap heigth	[mm]	24

Properties

Description:	Green Elephant Biotech GmbH CellScrew® mini GEB-CS-mini: TC treated, sterile, with filter cap
Packaging dimensions:	265 mm x 195 mm x 75 mm
Weight:	162 g
Theoretical total volume:	225 mL
Working volume:	50 - 120 mL
Growth area:	851 cm ²
Material:	Polylactic acid
Color:	Translucent



Sterilization method:	Gamma irradiation
Temperature range:	- 80 °C to 45 °C
Storage:	Room temperature, sunlight protected
Centrifugability:	No
Autoclavability:	No
Recommended rotational speed:	0.2 – 2 rpm
Mixing time:	< 8 min (@0.5 rpm)
kLa - value:	< 4.11 h ⁻¹ (@0.5 rpm)
Shelf life:	24 months
Packing unit:	3 CellScrew®s, 3 bags of one, 1 unit per box
Certificates:	General Quality Certificate
Quality management:	Manufactured, inspected and in compliance with product and quality specification requirements as documented in DIN EN ISO 9001:2015 quality management system.

3. Instructions for use

To address the difference in outer diameter between the CellScrew® mini and the CellScrew® 6K and 10K, the CellScrew® mini TriDock holding three CellScrew® minis can be utilized. It's recommended to cultivate three CellScrew® minis simultaneously. Should cultivation of only one or two be preferred, the unused spaces in the CellScrew® mini TriDock should be filled either with empty CellScrew® minis or operated without the CellScrew® mini TriDock. In such instances, adjustments to the roller device are necessary to align with the CellScrew® mini's diameter, and the rotational speed must be recalibrated accordingly.

The description below provides instructions for using the CellScrew® mini TriDock.

Prepare a sufficient seed train several days prior to starting the culture in the CellScrew® mini depending on the desired cell line and its growth rate. We recommend not to use the minimal inoculation density but a slightly higher concentration of cells to achieve a good growth rate and a viable culture. After reaching a confluency of 80 – 95 %, the cells can be processed and used to inoculate the CellScrew® mini.

Prepare 50 - 120 mL of growth medium per CellScrew® mini and prewarm it, until it reaches the desired temperature. Take the seed train bottles out of the incubator and check for contaminations, the right morphology and the confluence using a microscope. Detach the confluent and exponential growing cells from the seed train bottles, wash them, and suspend them in fresh medium.

Add the concentrated cell suspension to the prepared volume of growth medium to adjust the correct cell density of the inoculum. Transfer the inoculum into the CellScrew® mini by pouring the cell suspension



from the bottle or by using a 50 mL serological pipette. Put the CellScrew® mini in the CellScrew® mini TriDock, tighten the lid and transport the CellScrew® mini TriDock with the CellScrew® mini from the aseptic working bench to an incubator with the desired temperature, humidity, and atmosphere. Place the CellScrew® mini TriDock onto an angled (10 ° to 15 °) roller device. Set the rotational speed between 0.2 and 2 rpm and rotate the CellScrew® mini clockwise when viewed from above. Close the incubator and start cell expansion.

Depending on the cell line and inoculation density, the CellScrew® mini is ready for harvest after 3-7 days. Take the CellScrew® mini TriDock out of the incubator into an aseptic working bench and open the lid. Place the CellScrew® mini upright on the bench surface and discard the spent medium using an aspiration pipette and/or a 50 mL serological pipette.

Pour phosphate buffered saline (PBS) into the CellScrew® mini, hold it at an angle and turn the CellScrew® mini clockwise to wash the surface area and the cells attached to it. Discard the PBS using an aspiration pipette and/or a 50 mL serological pipette. Add trypsin or a detachment agent of your choice to the CellScrew® mini. Put the CellScrew® mini in the CellScrew® mini TriDock, tighten the lid and take the CellScrew® mini TriDock with the CellScrew® mini from the aseptic working bench to an incubator with the desired temperature, humidity, and atmosphere. Place the CellScrew® mini TriDock onto an angled (10 ° to 15 °) roller device. Set the rotational speed between 0.2 and 2 rpm and rotate the CellScrew® mini clockwise when viewed from above. Close the incubator and incubate for the desired detachment time depending on the detachment agent and the cell line.

Take the CellScrew® mini TriDock out of the incubator into an aseptic working bench and open the lid. Place the CellScrew® mini upright on the bench surface and add FBS containing growth medium or a similar inhibitor to the detachment agent. Hold the CellScrew® mini at an angle and tap it while rotating clockwise 10 – 15 times to rinse off still lightly attached cells. Bring the CellScrew® mini to an upright position and let the cell suspension flow to the bottom of the CellScrew® mini. Harvest the cell suspension with a 50 mL serological pipette and transfer it into a harvest bottle for further use.

4. Technical support

For technical support, questions or remarks please contact the technical department of Green Elephant Biotech GmbH via e-mail (tech-service@greenebt.com).